

REMARKS

Claims 1-37, 47, 64-70 and 88-98 are active in this application.

Claim 1 has been amended to include the tensile strength modifiers of Claims 15-17 (see also the 1st paragraph on page 19) and/or delivery system is free of solvent.

Claims 93-98 are supported in the specification at least at page 36.

The remaining claim amendments are for consistency with the now amended claim 1.

No new matter is added.

The claims have been rejected by Kitajima and Schobel. While Applicants continue to disagree that there is no evidence that these materials inherently possess the tensile strength as defined in the claims, it should be recognized that neither Kitajima nor Schobel describe a delivery system that is (A) free of solvent and/or (B) includes one or more of the specific tensile strength modifying agents as provided in the claims present in this paper.

As explained previously, the methodology employed by Kitajima and Schobel utilize solvents and the manner in which the solvents are removed, there will necessarily be residual solvent in the compositions they described and therefore cannot be said to describe a composition that is free of such solvents.

Further, neither of these publications describe the inclusion of the tensile strength modifying agents as provided in the claims (see, e.g., Claim 1). As shown in Example 1, pages 35-37, the tensile strength modifying agent facilitates the preparation of suitable delivery systems having a high enough tensile strength and which is not discussed by Kitajima and Schobel.

The Kitajima rejection

Kitajima describes a process for the preparation of capsules containing a core material, where the core material is dispersed in a solution of an organic solvent and an encapsulating material. (see col. 1, lines 40-45). The suspension (core material and encapsulating material/solvent) is then dispersed in an aqueous salt solution and then the organic solvent is removed (*Id.*). Kitajima emphasizes the necessity of the solvent in the process because it is the selection of solvent that is asserted as the invention:

The principle of the method of this invention is in the utilization of not only an organic solvent having a low polarity but also an organic solvent having a high polarity which is miscible with water and causes phase separation when it is mixed with an aqueous inorganic salt solution and in the utilization of drops of a solution of a polymer in an organic solvent suspended in an aqueous inorganic salt solution without being mixed therewith maintain their shape during evaporating the organic solvent through an aqueous phase when the system is maintained at a slightly reduced pressure or at elevated temperature. (col. 1, line 63 to col. 2, line 7)

In col. 3, Kitajima provides further description of the encapsulation methodology:

. . . The core material is dispersed in the polymer solution and the dispersion is suspended in a concentrated aqueous solution of an inorganic salt forming droplets. . . (lines 44-47)

The organic solvent is evaporated away by only stirring the system, but it is advantageous to stir the system at such a reduced pressure and/or increased temperature that the droplets are not broken. . . (lines 49-52)

This is also how each of Kitajima's Examples make the capsules (see col. 4-8), e.g., in

Example 1:

In a solution of 0.5 g of polycarbonate in 20 g of dioxane was dispersed 2.1 g carbon black and the resulting dispersion was dispersed in a concentrated aqueous solution of 90 g of ammonium sulfate in 150 ml of water at 20° C with stirring the system vigorously. Thereafter, by heating the system to 50 °C for 2 hours, the solvent was evaporated away and

polycarbonate capsules containing carbon black having a uniform diameter of about 2 mm were formed, which were washed with water, recovered and dried.

This Kitajima process results in capsules with core shell type morphology, see e.g., col. 3, lines 59-65 (See also FIG. 1 and FIG. 2 of Kitajima):

When the system is stirred in such condition, the organic solvent in the suspended droplet is evaporated off through the aqueous phase to deposit the polymer enwrapping the droplets of core material, whereby a substantially spherical capsule is obtained. By this procedure, capsules in spherical form having diameters of from 20 microns to 5 millimeters can be formed.

Under the conditions Kitajima describes for removing the solvent after dispersion (see above), no matter how hard one tries there will be a remaining solvent residue in the end product capsules. Therefore, the Kitajima compositions are not the same as what is defined in the claims that is free of such solvents. (See claims 1 and 92)

Further, Kitajima does not describe the inclusion of the tensile strength modifying agents as provided in the claims (see, e.g., Claim 1 and Claims 15-17).

Withdrawal of the rejection based on Kitajima is requested.

The Schobel rejection

Schobel does describe an encapsulated sweetener where the coating material comprises a hydrophobic polymer and a hydrophobic plasticizer and the polymer can be polyvinyl acetate phthalate (see col. 3, lines 37-42 and col. 7, lines 14-26).

Schobel describes in the paragraph bridging col. 8-9 that the encapsulation is prepared by spray drying, coacervation, or a fluidized bed coating process:

The present method of preparing the sweetening composition comprises encapsulating the sweetening agent or sweetening component with the coating materials within the parameters set forth above. Sweetening agent or sweetening component may be encapsulated by a variety of coating techniques, including spray drying, coacervation, and the like. Preferably, the sweetening agent or sweetening component is encapsulated by a method that operates in a similar fashion to fluidized bed coating processes, in which particles of sweetening agent or sweetening component are suspended in an apparatus that creates a strong upward air current or stream in which the particles move. (emphasis added)

Each of these procedures utilizes a solvent to prepare an encapsulation. In the instance of spray drying, the polymeric material is dissolved in a solvent and sprayed onto the sweetener. The coacervation technique involves mixing solvents containing the sweetener and the polymer and in the fluidized bed, much like the spray drying technique, the solvent dissolved polymer is passed through a specialized apparatus to effect coating (see also col. 9, lines 1-16 of Schobel).

This is what Schobel describes in the Examples found in col. 10-12. In Example 1, starting at line 66 of col. 10, Schobel describes the coating method:

Add plasticizer to aqueous emulsion of hydrophobic polymer and mix for about 20 minutes until plasticizer is uniformly dispersed in the emulsion. Add sweetener and water to the mixture and continue mixing for about 10 minutes or until

uniform. Charge a Strea-1 (Aeromatic) coating machine with the sweetener granules and apply coating. Both granulations IA and IB above were coated using the following parameters.
(emphasis added)

In Schobel the residual solvent remains and therefore Schobel does not describe a composition that is free of such solvents as claimed (see Claims 1 and 92). Further, while Schobel does describe including a plasticizer, Schobel does not describe the inclusion of the tensile strength modifying agents as provided in the claims (see, e.g., Claim 1 and Claims 15-17).

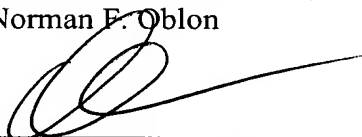
Withdrawal of the rejection based on Schobel is requested.

Favorable reconsideration and allowance of all pending claims is requested.

Should the Examiner have any questions or wish to discuss any aspect of this application, he is invited to contact the undersigned.

Respectfully submitted,

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